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# INTERNATIONAL COOPERATION ON SCIENCE ENGAGEMENT ACTIVITIES: INTERNSHIP AT ECSITE, EUROPEAN NETWORK OF SCIENCE CENTRES AND MUSEUMS

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## ABSTRACT

This report was developed within the scope of the Science Communication Masters degree of the Faculty of Social Sciences and Humanities of Universidade Nova de Lisboa (FCSHUNL) and Instituto de Tecnologia Química e Biológica (ITQB), which encompassed an internship at Ecsite – European network of science centres and museums from 1 March to 23 June 2017. After my first year of studies I found myself very eager to learn hands-on in any way I could, to use my own skills and to work within a well-organized team towards developing projects that made use of what I'd been learning. I opted for Ecsite was made because I thought that any project being developed by an organization whose vision embraces the fostering of creativity and critical thinking, while making science accessible to the public, would be relevant and fascinating work.

In the first chapter a scientific context is provided, building on relevant literature an overview of the conceptual underpinnings that will bring to light the themes under discussion. A quick revision of the history of science centres and museums and of key concepts such as science literacy or public understanding of science are followed by an analysis of the role of European institutions and networks on the democratization of science. In the second chapter the Ecsite's communication strategy provides the context for an explanation of the work carried out during the internship. Several projects and means of action, such as social media presence or online publications were inspected in order to provide an insight into the mission and vision of the organisation.

In the third chapter an overview of Ecsite's role in the European project *Let it Grow* is analysed*,* with a particular focus on a survey conducted among members of the network. Moreover, this analysis of the results in intended at providing answers into the implementation of biodiversity related activities. Lastly, the report concludes with a review of the main topics addressed, followed by illustrative annexes collected throughout the internship work.

KEYWORDS: Science communication, science centres, science museums, European network, science literacy, public understanding of science

**TABLE OF CONTENTS**

**Chapter 1**

# *SCIENCE CENTRES: A CONCEPTUAL FRAMEWORK*

The first chapter explores a wide scope of themes, all within a theory of science communication. Drawing on literature and related research I explore the recent history of science centres and science museums, as well as their public value in an active democracy, society and governance, and critically discuss key concepts, as scientific literacy or public perception of, and engagement with, science. This aims at setting the grounds for an understanding of the relevance of a European network of science centres and museums; and in doing so provide to the reader with a substantiated view of projects and initiatives closely related to my internship at Ecsite. Hopefully, by the end, a satisfying answer to the question "**why a network of science centres and museums?"** will be clear.

Let's first regard the relevant history of these institutions. Science museums have historically been perceived as spaces of public authority as they're regarded as institutions where people might review and examine the incontrovertible evidence of science. For Delicado (2004) they are also seen as privileged places to promote culture due to their nature as a public space equipped with rooms, libraries, laboratories and usual tight connections with investigation centres and universities. But the nature of these institutions underwent relevant changes across time. By the twentieth century museums of science had built "on their earlier emphasis on public education to present themselves as experts in the mediation between the esoteric world of science and that of the public". (Watson, 2007)

By contrast science centres are more typically concerned with presenting universal abstract laws, principles, and phenomena that transcend time and place

(MacDonald, 1998). These institutions are more recent and have a focus on a more sensorial and participatory method of exposing scientific topics. Therefore, when looking at both science centres and science museums as a whole – for they have, indeed, similar objectives and share a likeminded –, one must also consider their differences.

## PUBLIC VALUE OF SCIENCE CENTRES AND MUSEUMS

The value of museums for students and learning has been widely proven. A study by Watson, Dodd and Jones in 2007 found that 60% of pupils who attended museums achieved higher marks while assessing work after a visit, compared to pieces of assessed work they had completed prior to it. Another international study conducted by Falk (2014), after having collected data from 17 centres in 13 countries and interviewed 13 558 persons, acknowledged that the impact of science centres support the contention that individuals who used them were significantly more likely to be science and technology literate and engaged citizens.

*Persson (2014) also showed that, in the nineties, global growth percentages regarding new institutions were estimated to be of five percent per anum, and two percent for attendance. Growth seems to have continued and currently more than 3000 science centres worldwide are visited by more than 300 million visitors each year, while 25 years ago only ten percent of these institutions existed, showing that science centres present a value service to communities.*

If one looks beyond education, what other value might there be in this type of institutions? According to Koster (1999) both science centres and museums seem to be adapting their missions and methods to changes in society and within their own identity.

*Discussion in science museums is evolving to include social responsibility, the raising of social consciousness and science, technology, society and environment issues. Science museums are beginning to see themselves as important players in a number of external scientific, social, cultural and political contexts.*

The author also defended that an emerging set of seven attributes would largely define a ‘next generation’ of science centres, including a mission centring on integrated interpretations of science-technology - society issues. This would also consist of: a dedication to providing access and outreach to visitors and users of all ages, learning styles and backgrounds; a unifying institutional theme that helps to create context and connections; adoption of multimedia to create engaging experiences; developing topical multidimensional experiences that will serve to make the science centre regarded as a worthwhile lifelong resources to many invested stakeholders; establishing partnerships with other like-minded organizations that make possible combining resources for greater impact; and serving as a neutral ground for airing of society's most vexing issues related to science and technology.

Several scholars underline that science communication is most powerful when it drives participants to reflect on, and form, reform or affirm their attitudes to science and society. Solomon (1994) and Michael (1992) suggest that in order to investigate the ability of the public to express considered opinions and participate in decisions it is necessary to find a topic or issue that touches people closely. Therefore, opportunities need to be set up in which people feel able to collectively discuss a worthwhile controversial issue when presented, and there is access to knowledge of various kinds relating to the issue.

Exhibits and live events at science and discovery centres that generated emotions have been shown to be highly memorable, and the term "affective learning" coined by Roberts (1993) points out that strong emotions have the power to change visitor's attitudes. Adelman, Falk and James (2000) concluded that immediately after a visit to the National Aquarium in Baltimore there were strong emotional responses and increased levels of understanding and support for marine environment and conservation.

*Taking these facts into account it is easy to understand why institutions like science centres and museums, which already have a place of trust in the public, have become perfect candidates to be spaces of public discussion, as well as public information.*

Burns (2003) also actively defends that this would mean that institutions that promote science communication should aim to enhance public scientific awareness, understanding, literacy, and culture by empowering the public to attain "...an interest in science, a confidence to talk about it, and a willingness to engage with science wherever and whenever it crosses their paths".

## INSPIRING CRITICAL THINKING AND ACTIVE DEMOCRACY

Given that science related topics are increasingly engrained in the life of average citizens authors believe that so should any action that could increase the scientific literacy of the general public.

Previously it had been considered that an uninformed public was very vulnerable to misleading ideas, according to Royal Society (1985). This shared outlook enabled scientifically literate individuals to "deal sensibly with problems that often involve evidence, quantitative considerations logical arguments, and uncertainty", not only with respect to decisions involving their own lives but also with respect to issues that affect societies in general. (AAAS, 1989)

Driver et all (1996) also argued that science communication goals are necessary if people are to make sense of and manage the science and technological objects and processes they encounter (utilitarian argument); understand socio-scientific issues and participate in the decision making process (democratic view); appreciate science as an accomplishment of the human intellect and spirit (cultural view); and embody moral commitments which are the general value (moral argument).

*Personal decisions, for example about diet, smoking, vaccination, or safety, should all be helped by some understanding of the underlying science. Greater*

*familiarity with the nature and the findings of science will also help the individual to resist pseudo-scientific information.*

Durant, Evans & Thomas (1989) as well as OST & Wellcome Trust (2000) argued later that people's attitudes towards science are influenced not only by their knowledge of the subject but also by their perceptions of risk, benefit and morality as well as attitudes towards authority and other people.

*A "Science, Technology, Society and Environment" approach seeks to promote the development of a critical, scientifically and technologically literal citizenry; one that is capable of understanding many aspects of these fields, is empowered to make informed and responsible decisions and to act upon those decisions.*

In general, STSE education places science in a larger social, cultural and political context, and includes decision-making and action, often through the exploration of socio-scientific issues (Watts et all, 1997).

## AN EXAMPLE OF SOCIETAL ROLE: ENVIRONMENTAL ISSUES

Science centres and museums seem to be developing "bridging social capital" between scientists and the public through dialogue-events about contemporary science issues (Davies et al 2007; Lehr et al 2007).

*Bladine and Guichard (2000) argue that certain societal issues are giving new grounds for both science centres and science museums to act upon, while bringing light to responsibilities in several matters.*

In the last decade of the XX century, the worry for the protection of the environment and ecological risks has greatly increased, providing the opportunity for science museums to incorporate activities regarding nature conservation and foment attention and public dialogue. This is defended in an in depth review by Professor Justin Dillon who, in the April 2017 issue of Spokes, highlighted the need for civic science as a convergence of science education and environmental education. Dillon argues that in particularly *wicked problems* the science engagement sector can play a

crucial role that should not be overviewed and would imply rethinking the sectors model towards public concerns.

On the particular issue of climate change and according to WIREs 2013:

> "Faced with the complex, dynamic challenges of climate change as an interlocking set of environmental, social, and political forces, museums and other agents of change need to be able to adapt rapidly across different scales and to identify new allies and resources to cope with new or old problems. Networks allow relations across vast social and physical distances that need to be recognized and incorporated into cohesive responses."

There is also a growing demand for governmental action on issues of global importance, such as climate change. The notion of deliberative democracy in the context of climate change, in particular, presents a new challenge for museums, in requiring them to engage with content beyond that strictly marked as 'science', and as a space with the potential to build citizen capacity and an engaged citizenry in collaborative decision-making around climate change. Beyond science, science centres and museums are challenged to address the interests at stake and the power relations of climate change within each of these with a view to their examination and to making decisions. (Cameron, 2011, 2012) also argued that sustained change in attitudes, behaviours, and policies around climate change require museums and likeminded organizations to build alliances and diversify forms of action, to challenge and change deep and persistent frames and to shift tectonic plates of public opinion.

## SCIENCE LITERACY AS A TOOL FOR DEMOCRATIZATION

Science literacy is currently portrayed as an essential component of a democratic society. Scientific discoveries and technological advances are seen by many as cultural achievements, as worthy in shaping the average person's concept of self and a person's worldwide view as philosophy, art, humanities, or the personal sphere.

*Science and technology can now be considered as part of humanity's cultural achievements and should be familiar to members of a knowledge-based society.*

The concept of scientific literacy no longer rests on just the ability to read and comprehend science articles. In the early nineties Jenkins (1994) argued that science literacy commonly implied an appreciation of the nature, aims, and general limitations of science, coupled with some understanding of the more important scientific ideas.

This led Pella (1966) to conclude that the scientifically literate individual was characterized as one with an understanding of several fronts:

a) the interrelationships of science and society;

b) the ethics that control the scientist in his work;

c) nature of science;

e) difference between science and technology;

d) basic concepts in science;

f) interrelationships of science and the humanities.

Definitions for science literacy kept evolving and by 2003 Burns defined it in what is now considered a more modern approach:

*As a high priority for all citizens, helping them to be interested and understand the world around them, to engage in the discourses of and about science, to be sceptical and questioning of claims made by others about scientific matters, to be able to identify questions, investigate and draw evidence-based conclusions, and to make informed decisions about the environment and their own health and well-being.*

The thought that a scientifically literate public is more apt to understand public policy discussions based on science, and consequently to support the most rational policies that emerge from public discourse on the issue is also highly defended by Falk (2007). At an individual level, it has also been argued that the scientifically literate, ‘‘science citizen’’ (Irwin, 2001) is better placed to play an active role in modern society.

*Potentially, knowledge and understanding of scientific concepts, processes, and ‘‘how science works’’ can enable individuals to interpret the scientific*

*information that they come across in their everyday lives, make better informed choices and enable them to access, understand, respond to and even contribute to shaping scientific developments in society.*

Michael (2006) also argued that science is a powerful and pervasive aspect of people's lives and that the possession (or lack) of scientific knowledge and resources can translate into increased (or decreased) social agency/power.

Related to public support for science is of course the public's right to influence the science policymaking processes. The report of the Royal Society of London on the Public Understanding of Science (1985) states that a scientifically literate public would "...significantly improve the quality of public decision-making, not because the 'right' decisions would then be made, but because decisions made in the light of an adequate understanding of the issues are likely to be better than decisions made in the absence of such understanding".

## BEYOND SCIENCE LITERACY

As Burns (2003) points out, most European nations use the words "scientific culture" to describe a field known in the UK as "public understanding of science", and in USA as "scientific literacy". The author agrees with Falk (2007) when defending that scientific culture is an integrated societal value system that appreciates and promotes science, *per se*, and widespread scientific literacy, as important pursuits.

From this perspective, public understanding of science is not some generalized body of knowledge and skills that every citizen should have by a certain age, but rather a series of specific sets of only moderately overlapping knowledge and abilities that individuals construct over their lifetimes. Burns (2003):

> Shen (1975) had previously shown to believe civic scientific literacy to be the cornerstone of informed public policy. He suggested that the aim of this category of scientific literacy was to enable citizens to become sufficiently aware of science and science-related public issues in order for the average citizen to become involved in the decision-making process related to such issues as, for example, health, energy, natural resources, food, the environment, and so forth.

> “Understanding is not a binary condition...but rather a developing comprehension of both the meaning and implications of some knowledge, action or progress based on appropriate commonly accepted principles. “

This notion was also reinforced by the AAAS in 1989, that shared this outlook on knowledge and learning, as well as on ways of thinking and acting, believing that it enables scientifically literate individuals to "deal sensibly with problems that often involve evidence, quantitative considerations logical arguments, and uncertainty", not only with respect to decisions involving their own lives but also with respect to issues that affect societies in general.

More recently, in 2010, Pearson argued that the development of a scientifically literate citizenry is tied to the future of a robust democratic society. They explicitly call for proficiency in reading and science literacy for all envision a populace capable of fully participating in the workplace and civic demands of the 21st century. The author also adds that the ability to make meaning of oral and written language representations is central for robust science knowledge and full participation in public discourse about science.

Related to scientific literacy is also the ongoing clarification for science capital. Archer et al 2015 suggests that science-related resources should be legitimately considered as important contemporary forms of capital. This means science capital plays a role in the production of social relations of advantage/disadvantage, in scientific industries and, at an individual level it would produce relations of privilege or subordination within society. Bourdieu (1986) had conceptualized science capital as the legitimate, valuable, and exchangeable resources in a society that can generate forms of social advantage within specificfields (e.g., education) for those who possess it. This term allows for a broader view of people's relation with science, since it touches upon things like science-related behaviors and practices, participation in out-of-school learning contexts and consumption of science-related media.

> "Through the interaction of capital and habitus, families may produce values, attitudes, expectations, and behaviors in children that promote academic attainment." (Sandefur et al., 2006)

## SCIENCE, SOCIETY AND GOVERNANCE

Within Western Europe in particular, something interesting has happened to the language of science communication and scientific governance (Hagendijk et al. 2005). Along with other British reports from the late 1990s onwards, the House of Lords Select Committee (2000) presented science's relationship with society as being under strain and called for a change in the culture of science communication and decision-making "so that it becomes normal to bring science and the public into dialogue about new developments at an early stage".

In 2002, the European Commission published its own action plan on science and society, and called for an "open dialogue" over technological innovation as part of its "new partnership" between science and society (European Commission, 2002). Yore (2006) thus concluded that

> "the need to inform the public of decisions about and what influences policy in science literacy was a clear and consistent outcome of the conference deliberations and that any future research agenda should consider ways to inform a wider variety of educators, bureaucrats, and politicians and to capitalize on high-profile policies, conferences, and assessments."

Archer (2015) defends that scientific industries are positioned as closely linked to national economic competitiveness, and the need to widen and increase the level of science-qualified and scientifically literate individuals within society is routinely cited as a priority to meet the needs of the ''knowledge economy'', underlining the exchange value of scientific forms of cultural capital.

It is also argued that national wealth depends on competing successfully in international markets. International competitiveness in turn reels *inter alia* upon a vigorous national research and development program in order, first, to maintain or capture ground in the worldwide race for new high-technology products in the case

of developed countries and, second, to exploit smaller niche markets in the case of developing countries. Only nations whose citizens possess an appropriate level of scientific literacy will be able to sustain this supply. (OECD, 2006)

*If citizens are to be involved in decisions about the appropriate use of such funding, traditional voting approaches to democratic engagement will no longer suffice, and alternative approaches will need to be found. (Bultitude, 2011).*

As outlined by Benneworth (2009), recent changes in the nature of decision-making processes have created a 'democratic deficit', whereby political and scientific decisions are increasingly made outside of the public arena. Arguably however, the European Commission is playing an ever greater role in determining the direction of scientific research, allocating a budget of nearly €7 billion for research and innovation in 2012 (Europa, 2011).

Public engagement can be seen by institutions as an opportunity not to rethink their policies and practices, but to gain trust for a predetermined approach. Both Burgess and Guston offer an optimistic account of public engagement, suggesting that, if decision-makers are themselves enrolled in dialogue, and if connections are made to politics, these processes can not only succeed in their own terms, but generate further conversations and capacities that move us some way towards what Guston describes as "a revival of how we conceive of science in our politics" (Silgoe, 2014). This author also strongly argued that if public engagement is to have political purchase, it must happen in places and on issues that are inconvenient, emergent or marginal, as well as those in which scientific communities are well defined and receptive.

Within a general frame of promoting museums as civic agents, there has been much made of the potential for museums to operate as spaces of deliberative democracy. From programming for scientific citizenship (Bandelli, 2010) and holding citizen consultations in the museum itself (as in the role of Cité des Sciences de l'Industrie, Paris and the Boston Science Center in WWViews on global warming), to academic propositions casting the "museum as agora" (Einseidel, 2004) or direct appeals to museums to become "a loci of deliberative democracy" (Bienkowski quoted in Feeney, 2010).

*To this end, museums and science centres can operate within spaces between formal politics and communities and in difficult debates around policy through the facilitation of deliberations involving cross-sectoral stakeholder groups together with research.*

That is, by monitoring policy in a generic form at a distance as mechanisms for detailing multifarious social futures against various disciplinary, lay expertise and local knowledge, in imagining scenarios as potential policy positions, and ways to live in the world differently under the conditions of climate change. (Cameron F, Deslandes A., 2011)

Cameron (2013) thought it necessary to think about audiences differently, as valued actors, since traditional relations between museums and audiences are based on disciplining them—telling them to change their behaviour and become good ecological citizens.

*The author defends that new relations must be formulated with audiences that are more respectful of their own skills, capacities, and opinions – co creation and co discovery become key themes.*

Responsible Research and Innovation or RRI is also an important concept and one that is strongly supported by the European Commission as part of the Horizon 2020 research framework. In RRI the responsibility is shifted, from a societal point of view, based on the premise that if research and innovation have an impact on society, the research and innovation community has societal responsibility as well.

RRI is also about bringing forward and valuing the competences of citizens who may not be scientists but still hold important opinions, desires and knowledge for certain phenomenon and the advancement of science. (RRI for beginners, Spokes #10)

## THE RELEVANCE OF MUSEUMS AND SCIENCE CENTRES

Given the rationale presented so far, it is now reasonable to admit that museums and science centres hold a unique position in the media and political landscape as trusted information sources and are emerging as key players.

*The modes of engagement with audiences, visitors, and publics, allow museums to provide sensorial and affective experiences through the agency of objects and immersive environments, which facilitate an active role, on the part of audiences, in co creating narratives.*

What is required from the museum sector is a consideration of how to be part of developing long-term processes of social change. In this regard, museums and science centres must consider the opportunities of connecting with existing local networks, where the museum or science centre becomes part of a larger ecology (social and technological) of communication. (Cameron & Nielsen, 2015)

*These institutions have the potential to be more influential in the political field, and in collective action, helping to formulate and influence different types of interventions.*

They can help to forge connections on generic policy options by critically reviewing the debates and options against the research and by examining their implications for various social futures scenarios through systems of peers, open review, and quality assurance processes.

*They can act as congregational spaces, bringing cross-sectoral stakeholder groups and audiences together with the research, and by facilitating deliberations around the various options and testing these against various disciplinary, lay expertise, and local knowledge. They can facilitate inputs into potential policy positions as a mechanism for detailing future scenarios and ways to live in the world differently under the conditions of climate change.*

Museums and science centres can feed the ideas that emerge from these deliberations into other governing agencies as a precursor for action and as plural governance projects. (WIREs Clim Change, 2013)

We may conclude that science and museums have great capacities and potential, to forge links between different communities, to increase science literacy or deliver positive societal impacts. The attainment of these goals is connected with the importance of a network that encourages initiatives that associate science to different sectors of society and creates opportunities for members to collaborate in further raising societal relevance. We can now explore further the value and work of such a network for the science communication and engagement community.

**Chapter 2**

# *COMMUNICATION STRATEGY AT ECSITE*

The purpose of this chapter is to delve into some of what is done by the Communications and Events department of a European network that includes science centres, museums, and other types of organisations, working under the umbrella terms of science engagement. Through the strategic plan of the network, as well as accounts from members, and my own, the reader should get a glimpse of the communications efforts of Ecsite, the events organised by the network, and even some of the projects being developed there.

Ecsite is the European network for science centres and museums. As an organisation the core values of Ecsite set the focus on "the promotion of knowledge sharing between science engagement professionals".

*The network's main vision is to foster creativity and critical thinking in European society, emboldening citizens to engage with science.*

Its mission is to inspire and empower science centres, museums and all organisations that communicate science to the public, and to further promote their actions. (Ecsite website/Mission, 2017)

Regarding science capital as an essential condition for a well-functioning democracy, Ecsite also advocates for the involvement of citizens in the research process. At the time of the production of this report the network counted 363 members, more than 62% corresponding to science centres/museums, 5% to natural history museums, almost 7% to research bodies, and 25% to private companies, festivals, or other organisations.

## A BRIEF HISTORY OF ECSITE

After the creation of the Exploratorium in San Francisco in 1969 the science centre field expanded with a commitment to encouraging exhibit interaction and visitor participation. The founding of the ASTC (Association of Science-Technology Centers) in the USA in 1973 was followed by an evolution in Europe as well, since European science centres drank from ASTC has a source of information and inspiration to create their own network.

Ecsite was founded in 1989 when there were but a few science centres in Europe in a handful of countries.

*The number of science centres in Europe has since then risen from a few dozen to a few hundred and all EU member states today have science centres or are planning their creation.*

The longstanding struggle of the school system to equip students with practical skills also propelled science centres as informal science learning environments, places for inspiration, wondering and debate.

*Ecsite members believe it has the capability to turn a network of science centres into a network of forums for debate, a requirement of democracy and an excellent tool for globalisation when correctly carried out.*

According to its members it provides opportunities for benchmarking and maintaining professional quality since many members have a small national base and benefit from international exchange. Ecsite presents itself as a forum for exchange of information at a professional level providing services from business opportunities to access to singular resources. Over the years the organization's purpose has remained to increase the professional capacity of the field by taking up different projects and challenges. (History of Ecsite, 2006)

COMMUNICATIONS STRATEGY

In the updated strategy for communications, from 2016 up until 2020, Ecsite focuses on five top priorities to implement their strategic goals:

1) The network wants to **enable collaboration for members as a way to offer professionals new opportunities in the field.** This should be achieved by fostering and facilitating partnerships while also promoting and contributing to maximize international opportunities by further enriching events and by making the best use of communication channels to engage the community in sharing experience and resources.

2) A second related priority is to **maximize the impact and role of the networks members while reinforcing its own role by communicating and updating developments in the science engagement community**. By encouraging collaborative opportunities Ecsite wants to raise the operational and strategic performance of members, as well as their societal relevance. The organisation offers to do this by creating opportunities to exchange knowledge, to support inspirational environments that provide experiential science learning and encourage initiatives that connect science engagement research and its practice.

During my time at Ecsite I could witness first hand some of these aspects from both the executive point of view, from my work at the Brussels office, as well as the community point of view, particularly in some events that I will highlight further in this report. I was able to critically engage in efforts to advance calls for international collaboration, be it by sharing opportunities in the website or even because the workers actively share these opportunities in any social group whose members would supposedly be interested. Besides that, the Communications team, and particularly, the team of Project Managers and the Director seemed to always have a straight line of contact with different organisations, in order to boost the amount and quality of partnerships. One of the most effective tools for this type of connection is the Ecsite Annual Conference. It has become the most prominent meeting for science engagement in Europe, gathering over a thousand professionals

each year. It allows Ecsite members, who attend these events at reduced rates, but also all other interested professionals, to take part in the conference sessions as speakers or convenors, to meet, share ideas and work together to push forward the field's limits.

**The Annual Conference: a major community event**

In 2017 its 28th edition the Ecsite annual conference was hosted by the Natural History and Science Museum of the University of Porto (MHNC-UP) and Ciência Viva, bringing together 1,058 participants from 52 different countries to Porto, Portugal. From 13 to 14 June the Pre-conference occurred, with workshops on topics ranging from museum games to sharing space resources, intended to give in-depth insight into numerous aspects of the science communication field. From 15 to 17 June the full conference ran with dozens of parallel sessions, debates and workshops, showcasing the latest research and developments in public engagement. Participants could choose to take part in 90 dynamic thematic sessions, delivered by over 400 speakers, on topics such as science communication in the post-truth era, learning ecosystems or designing for emotions, as well as the anticipated keynote speeches by Nina Simon and Dr. Alice Roberts.

The communications team, which was constituted by a manager, an officer and another intern beside myself, prepared thoroughly for the annual conference by putting together a strategy for the conference days and prearranging months in advance. We drafted dozens of Tweets and Facebook and LinkedIn posts for social engagement to go on during the conference. This allowed the team to remember specific events that would always be important to mention in social media, while leaving space for creativity and spur engagement. At the Business Bistro, a specific space at the conference venue in which businesses can showcase their services, Ecsite had a booth set up as well, where participants could sit and read issues of Ecsite's online magazine, Spokes, and even an exceptional print version of selected

articles, Spokes Panorama. For the conference, and the Business Bistro area, the whole office decides on what to bring to the Ecsite booth to boost visibility and enjoyment. In 2017 and after some brainstorming it was decided that a photo booth would be available as a fun way to showcase some of the projects the executive office was currently working on. This way people who usually knew Ecsite only as a conference, could also get to know what other things the organisation was working on. Together with each project manager, and another communications intern, I worked on creating fun and pertinent accessories for the photo booth, and we built at least one speech bubble connected to each project, as well as the general office and Spokes. Anyone who wanted to have their picture taken could choose to use of the speech bubbles made to display the voice of several ongoing Ecsite projects. The photo booth ended up being funded by the *Sea Change* project and the pictures


***Figure 1.*** *Photo taken in the Ecsite booth with some "mascots" of the communications team*

taken could be printed in the moment or sent online to an address provided.

To be used by different participants during the conference, specific hashtags were created, that allowed someone who was specifically interested in events at a certain room, according to the programme, to follow what was going on there with the room hashtag.

*According to twitter analytics post conference, the general hashtag #Ecsite2017, referent to all the main conference events, reached 3.8 million users and 13 million impressions, which was 40% more than the previous year.*

This would not have been possible without continuous community management and engagement with the participants. A selection of photographs uploaded daily to the Ecsite Flickr account by the professional photographers was also available, not only for the team to use but also for curious participants. Compiled daily Storifys [6.2] – an online tool that allows users to put together a fusion of social media interactions across several platforms – were also available after each conference day. I also suggested the creation of short videos, particularly to increase the reach of Facebook posts, since video has been of rising popularity in this social media platform.

*The videos became the most viewed in the totally of the visual media library in the Ecsite account, together reaching around 4000 views.*

I also worked on a final video, posted after the event, which wrapped up the whole conference and highlighted its most relevant moments. It reached 2,3 thousand views, with another 600 on the Ecsite YouTube account.

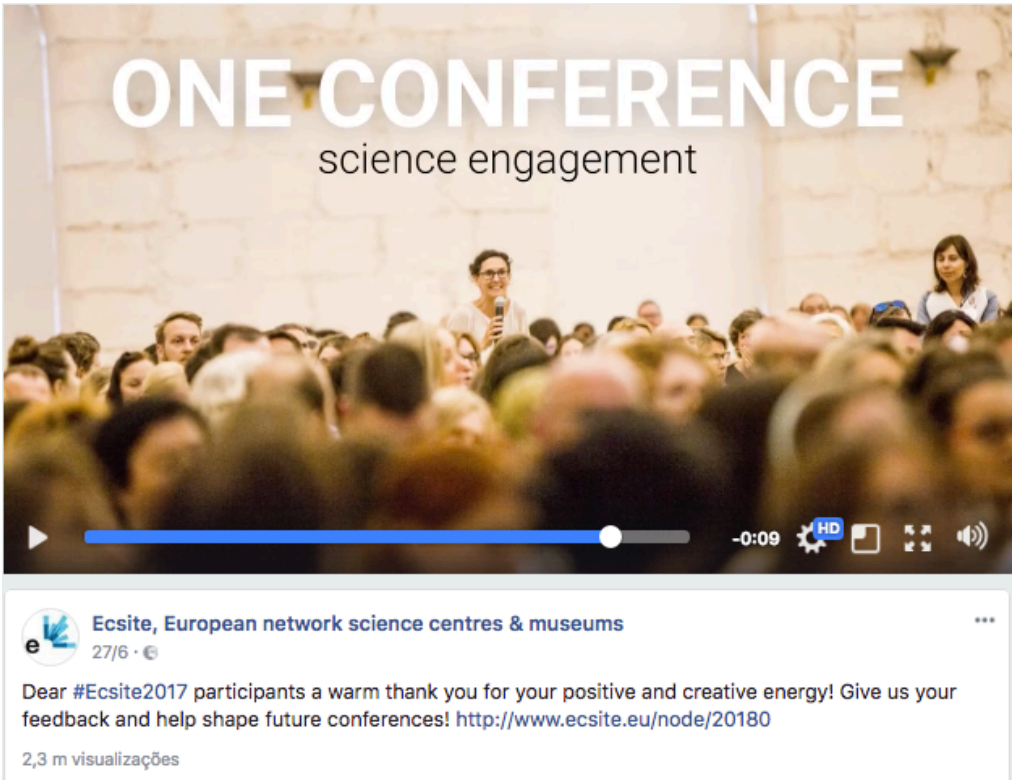


***Figure 2.*** *Frame of the "wrap-up" video published on Facebook*

3) Another goal, to **nurture existing members and to achieve broader memberships and participation**, is demonstrated by committing to diversity and inclusiveness through Ecsite's communication and governance. It's met by developing a cohesive members' community and by maintaining efficient communication channels. Recognising and fostering outstanding achievements in the field and improving benefits in all membership categories the network also hopes to better address the diverse needs and expectations of members. Nurturing members comes for instance by sharing specifically catered resources. The Ecsite website has a specific "Resources" section where members can find documents and information on science engagement and particular activities. During my stay at Ecsite I internally shared articles, toolkits, reports or online tools that can be submitted, even by the members, as relevant material.

*This allows not only for good practices or innovative tools to be spread more effectively but for an active flux or knowledge and sharing.*

EU Video Guide to Science Communication | Ecsite


The European Union media chanel, EU Science& Innovation, released on 8 February a series of presentations about science communication.

The video series aims to advocate that communicating with society about science and its benefits is more important than ever: *"This is why projects funded under Horizon 2020, the current EU Framework Programme for Research and Innovation, are asked to engage in communicating science to audiences beyond just their peers."*

The presentations have been released as part of the ESOF (EuroScience Open Forum). Created in 2004 by EuroScience, the biennial European forum brings together over 4 000 researchers, educators, business actors, policy makers and journalists from all over the world to discuss breakthroughs in science. It is the largest interdisciplinary science meeting in Europe dedicated to scientific research and innovation, offering a unique framework for interaction and debate for scientists, innovators, policy makers, business people and the general public.

***Figure 3.*** *Resource shared on the Ecsite website*

Ecsite in general, and this goal in particular, also aim to recognize relevant achievements. Since 2015 that impactful work within the informal science education sector can receive a prestigious incentive to contribute to the development of excellence in science engagement. By creating and attributing the Mariano Gago Ecsite Awards the network propels members that have demonstrated innovation, creativity and who are actively making an influence that can serve as a source of inspiration. Mariano Gago awardees are given visibility during the Ecsite annual conference, as well as in a specific publication on Spokes that mentions and describes their work. Previous winners have been awarded for projects that embody socially relevant or visionary concepts, like 2017 winner Dialogue Social Enterprise from Germany, for their Dialogue in the Dark exhibition concept. Another category in 2017, since categories change each year according to relevancy, also celebrated simple and creative solutions in science engagement, nominated by peers for their smart, cost-effective ideas. This was the case of TRACES - Espace des Science Pierre-Gilles de Gennes from France, that won for their Frugal Science exhibition.


***Figure 4.*** *Mariano Gago Ecsite Award winners 2017*

4) A fourth goal is to **advocate for science engagement and influence policy by positioning Ecsite as the voice for a diverse science engagement community.** Ecsite wants to be an advocate for the sector by participating in policy making and collaborating with members, while also advocating nationally to raise impact and visibility and to build partnerships with organisations, order to promote European expertise at the international level.

One of the ways to achieve this is by developing content driven communication through cross-platform and integrated online tools, like social media content in the Ecsite accounts, which are catered to the members' needs and interests. Important events or relevant courses or job vacancies are shared constantly in the social media platforms of the network. In my work I was particularly involved in the @Ecsite and @Spokes Twitter accounts. One of the things most effectively posted on those accounts were sharing exceptional days or events with the respective hashtags and relevant content. It can be done to great impact

and it allows for relevancy and significant bonds to be built between the network and its members.


***Figure 5.*** *Tweet from the Spokes account for World Refugee Day*

In the Ecsite website there is also section for news, calls, and publications dedicated to helping members stay in touch with the latest developments in the European science engagement scene.

WEAR Sustain open call for collaborative art and technology | Ecsite

WEAR sustain

WEAR (Wearable technologists Engage with Artists for Responsible Innovation) Sustain is a two year project, funded by the European Commission's Horizon 2020 research and innovation initiative. It aims to engage creative industries to work more closely with technology and engineering industries.

There will be two Europe-wide competitions in April and October 2017, open for teams in art or design working with technology or engineering entrepreneurs to co-innovate and develop **Next Generation Wearables** and smart textiles that are critical, ethical and aesthetic.

For their first, now open, call WEAR Sustain is looking for 24 teams to develop compelling, innovative, ethical and sustainable solutions for wearable technology or e-textiles development, across all possible application domains. Partners can be found independentely or through their **network** of creative partners.

Up to €50,000 of funding is available to teams, which offers the means to jumpstart promising co-created concepts and receive support from experts towards the development of a prototype as a possible go-to-market trajectory.

The deadline for applications is 31 May 2017 and selected finalists will be invited to pitch to a panel of experts in the week of 21-23 June 2017. Teams must be prepared to work together on their prototypes from 1 July 2017, over a period of 6-8 months and the winners will be notified by 30 June 2017.

You can download **here** a full description of the open call programme or find out more about the initiative on the WEAR Sustain **website**.

***Figure 6.*** *Call published on the Ecsite website*

Another big tool that has positioned Ecsites' voice in the science engagement community is Spokes. Spokes is the online science engagement magazine, published monthly by Ecsite. It not only promotes the latest news but also goes further with lengthy features and by showcasing good reads, publicizing events and opportunities. A diverse editorial committee represents several branches of science engagement in Europe and delivers, each month, publications on case studies, interviews, or dissertations about state of the art issues. When each issue comes out subscribers receive a well-delineated newsletter [6] that serves as an intro to what the current issue might offer. That way if a theme is interesting all it takes is a click on a link to read the informed opinions of their peers. Issues usually have a common theme and are relevant to current affairs. The magazine is of November 2017 in its

35th issue and has covered relevant themes such science capital in practice or access in museums with interviews to dozens of professionals.

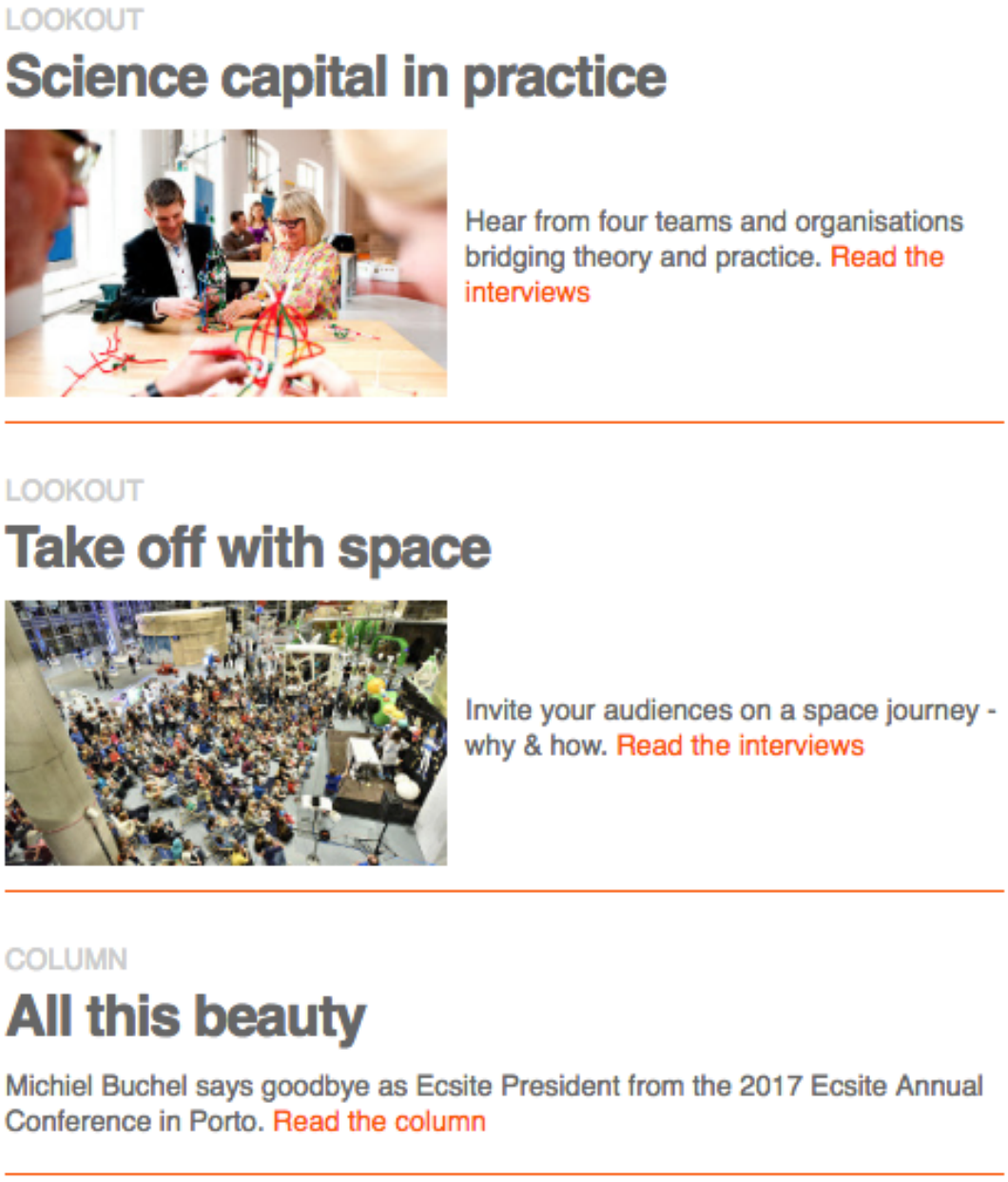


***Figure 7.*** *Sections of the May 2017 Spokes issue, number 28*

Finally the network aims to **use resources to their fullest potential by expanding and managing Ecsites' financial resources in a sustainable manner to ensure longstanding leadership in the field, as well as building collaborative projects and new income sources.** The efforts to do this will present themselves by constantly diversifying financial income streams and reducing dependence in funding while increasing capacities in marketing and fundraising are some of the strategic goals thought to expand the networks capabilities.

The strength of such an organization lies in the capability to manage network projects in addition to providing traditional information and services to members. Initiatives from the Brussels office can be a platform for project exchanges between members, with examples like the exhibition "*Beyond the Lab*" of the EU project *Sparks*. Ecsite is also an ideal partner for European Union funded projects and can achieve important improvements of networking activity by addressing relevant issues and inviting global experts to acknowledge its members.

My experience at the Ecsite office allowed me a vision of an organisation mostly seen as a big conglomerate of professionals. The team who works at the Executive office supports an open dialogue between the people who directly work together, and even the different "branches" of the office – administrative, project managers and communications. There is an ongoing effort to strive for comfort within the workplace and to promote a stress less work environment and even active sustainability. The different backgrounds of the workers are celebrated, as I even had the pleasure to try new foods that colleagues would bring from their home countries or travels, to share with everybody. And I think all of this transpires in the voice of Ecsite and the work performed with the network members: it promotes collaboration, celebrates differences and achieves goals in a very professional but friendly manner.

**Chapter 3**

# *INTERNATIONAL SURVEY ON BIODIVERSITY RELATED ACTIVITIES*

So far we have explored the history of the role of science centres and museums in society as well as what is strategically done by Ecsite's communications team. In this next chapter a specific example of an interaction with members, in order to propel Ecsite's involvement with key European actors, will be presented. At Ecsite thematic groups bring together professionals to exchange ideas and best practices on specific topics within the field. That's the case of the Nature group, which brings together professionals and institutions who engage audiences with nature. Based on feedback from the Nature group, specific ongoing projects and upcoming biodiversity related activities, the team decided to launch a survey where members would be asked to relay their plans for the upcoming International Biodiversity Days and general activities that had been, or were, being implemented. This was also done specifically to map out possible collaborations with the Environment Directorate-General of the European Commission, who had shown interest in learning more about the types of activities being put together by European science centres and museums. I found it pertinent to discuss here the results of the survey, as an example of the networks involvement in international engagement initiatives.

In a survey targeted at Ecsite members and available from 13 April to 14 May 2017, a total of 23 answers were gathered with comprehensive remarks from science centres and museum professionals about actively engaging audiences with environmental topics.

This survey was sent by email to 373 professionals in the Ecsite list and opened by 163 of those members, although an article on the Ecsite website also

asked readers to provide their answers. It's important to notice that usual open rates on MailChimp are around 20%, but one can still assume other causes for this level of participation: that it might not have been a relevant subject to many of the members, a disconnection to the communications efforts, that they might have found themselves too busy to participate in this type of survey, or simply not interested. But given these numbers it's important to note that the sample of answers cannot be considered as fully representative of the European engagement scene, or even the whole members list. It is also relevant that through other initiatives, like the *Let it Grow* campaign, Ecsite knows of member activities related to environmental issues that were not mentioned in this survey.

*Let it Grow* was a joint conservation campaign (2015-2017) organised by Ecsite together with the European Association of Zoos and Aquaria (**EAZA**) and Botanic Gardens Conservation International (**BGCI**). Together, the zoos, aquaria, botanic gardens, science centres and museums (etc.) members of these three organizations receive more than 240 million visitors a year, so in 2014 a memorandum of understanding was signed, in order to join forces to engage audiences with biodiversity conservation and specifically to enhance the implementation of the Convention on Biological Diversity's AICHI Target 1, namely that: "By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably." (Let It Grow website/About)

By focusing on urban threats to biodiversity *Let it Grow* aims to raise awareness over a full range of native species that can help keep ecosystems healthy for all forms of life, including human life. Locally, involved institutions can focus on citizen science oriented goals of the campaign to get citizens involved in experiencing and measuring biodiversity. By reporting back on their statistics, organisations are then working towards the goal of showing world leaders the value and reach the *Let it Grow* coalition can have as an implementing partner for various

political targets and strategies. The campaign had a peak from 20 to 22 May 2017 for the International Biodiversity Days, when members promoted a whole range of activities oriented towards those goals of engaging audiences for a more sustainable future while raising awareness about environmental issues.

## SURVEY RESULTS

The Ecsite members' answers represent the activities being planned around the International Biodiversity Days, but also in their general annual programme, for nine different countries: two entries from the UK, two from Belgium, two from Denmark, three from Spain, one from Norway, one from Estonia, two from Italy, one from Israel and nine from Portugal.

In the survey results a total of 99 projects related to environmental topics were identified. Participants were able to fill in their answers and describe their running, or near future, activities and these were diverse and ranging from exhibitions to particular events and learning programmes, as well as citizen science initiatives or online projects. Among the "others" category, actions such as science shows or engagement campaigns were also mentioned. The answers showed that "exhibitions" are the most used type of activities to cover environmental issues. Besides that, "events" was almost equally as popular, followed by "learning programmes". "Online projects" were the least used for these topics, as well as "citizen science".

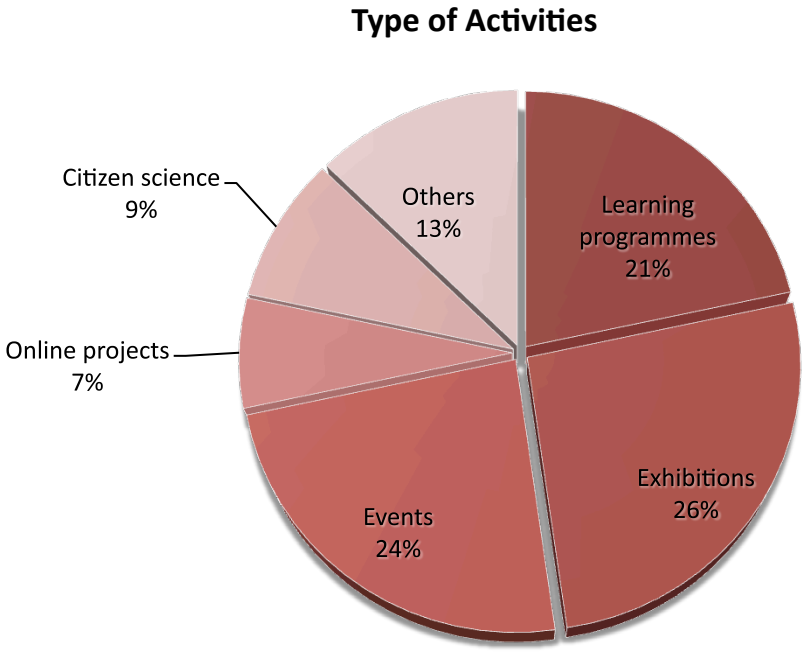


***Figure 8.*** *Graphic showing the types of activities described in Ecsite members answers*

The target audiences for such actions ranged from families and children, to school groups and the general public. Time frames for project implementation were significantly diverse, going from one night or two days, to five years. “School groups” and “all publics” were the two largest categories, together representing more than half of all audiences. “Families” only comprised little more than a tenth of the audiences targeted and “Adults” were more times regarded as target audiences than simply “children” (but it is important to notice that children are an indirect target audience in both “families” and “school groups”).

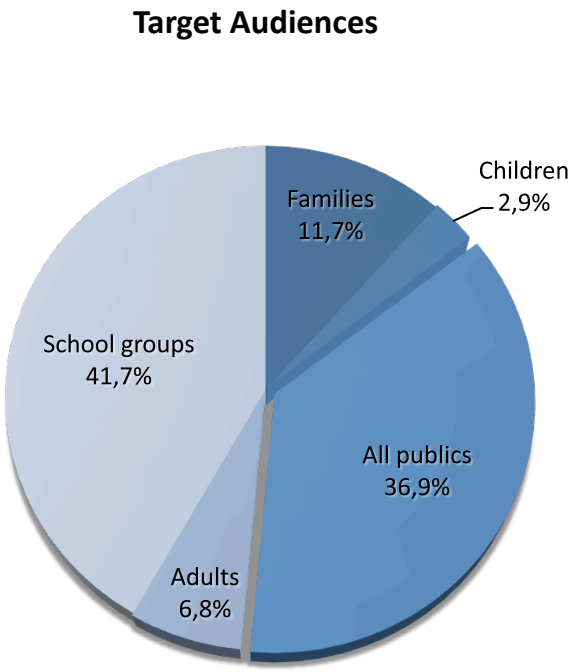


***Figure 9.*** *Graphic showing the types of audiences targeted by the members' activities*

When asked to select from a range of topics connected with current priorities for European level actors (see Table 1.) responses revealed that most are running or planning to run activities on "The importance of pollinators in particular" (27 projects out of 99) followed by "Ecosystem services in general" (25 out of 99). Many also cover the subject of "Waste in general" (20 out of 99), "Plastic for the environment in general" (19 out of 99) and "Invasive alien species" (18 out of 99). "Water: access to drinking water and water re-use" and "Marine litter in particular" topics both had 14 projects out of 99. Only five projects focused on "Urban waste in particular" and none touched on "Noise and health". In total the most covered topics were "The importance of pollinators in particular" and "Ecosystem services in general", while the least addressed were "Urban waste in particular" and "Noise and health".

| |
|---|
| Marine litter in particular |
| Water: access to drinking water and water re-use |
| Noise and Health |
| Ecosystem services in general |
| The importance of pollinators in particular |
| Invasive alien species |

***Figure 10**. List of topics to choose from, as listed in the survey*

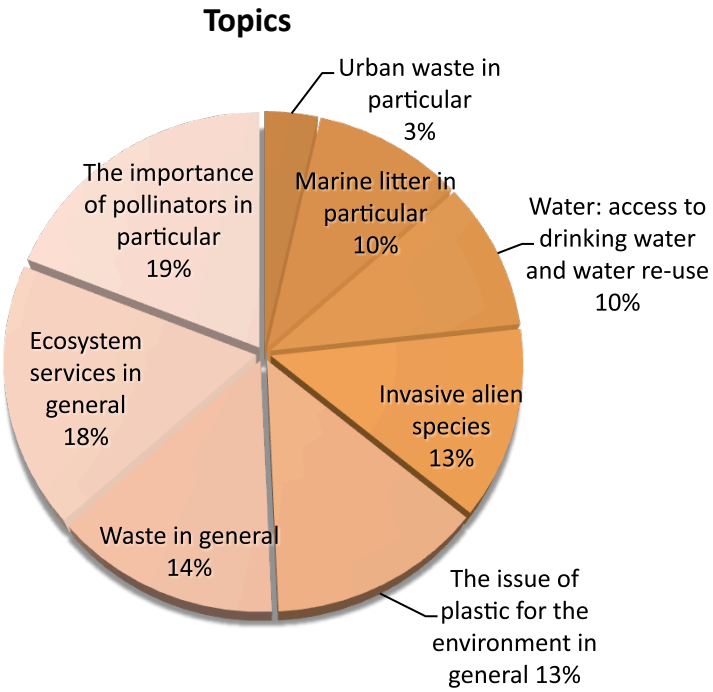


***Figure 11.** Topics of activities covered by Ecsite members*

When asked directly about how EU authorities could best support their actions, Ecsite members' suggestions can be summarized by their interest in these different elements (sorted from the most to the least frequently suggested):

- Funding to help develop programmes and tools as well as specific calls for smaller institutions;
- Better engagement with science centres and museums as trusted middlemen with society;
- The creation of a platform to facilitate networking and to share ideas and experiences;
- New programmes dealing with urban nature or specific calls about sustainability;
- Joint actions and awareness campaigns involving Science Centres and Museums.

**Chapter 4**

# *FINAL CONSIDERATIONS*

The sample of answers to that specific survey, although not fully representative, could be telling on the type of activities being run on this kind of biodiversity conservation engagement. It makes sense that exhibitions are the most used tools by science centres and museums, but we learned that events are growing almost equal, which goes with a more modern approach for such institutions. Citizen science events still have room to grow, as well as online projects, as they only comprised less than 10% of activities each. This is relevant also when looking at the target audiences of such activities since school groups and the general publics are given more attention than any other category, with children and adults being the least addressed. Since online projects and citizen science are very much targeted to these particular audiences this means that those activities and publics could grow together.

In terms of topics some of the ones addressed do correspond with current EU environment priority goals, 27% of projects touching on the subject of the importance of pollinators and 25% on ecosystem services in general. Given that this survey was sent out around the time for a peak of activities for the Let it Grow campaign and International Biodiversity Days it's easy to understand why organisations might have chosen to give weight to these topics and less to topics such as urban waste or noise and health. Still, urban waste and the problem of plastic were covered by 20% and 19% of initiatives, opposing invasive alien species, a more directly related subject with less than 18% of projects. This could mean that these subjects are regarded as particularly relevant nowadays or are already being covered over the year on other continuous activities.

When directly asked what sort of actions they'd like to see from EU authorities that would help science engagement professionals most wanted funding and specific calls for sustainability, even for smaller institutions, follow only by a more active contact with science centres and museums as institutions that can serve as a catalyst for science and society dialogs. This is connected with the creation of a platform to facilitate networking between organisations but also when asking for more joint actions and awareness campaigns involving science centres and museums.

Given that Ecsite works specifically on connecting organisations and already offers a website that has visibility within science engagement community, there is certainly room to serve as a needed platform and to engage in dialogue with higher establishments. Science communication professionals can only benefit from an organisation that represents their qualms and intentions to the highest actors and current European biodiversity conservation goals will need organised group action to be met, so a European network that acts as that source of dialogue may be more relevant then ever.

In general organised international cooperation can be tremendously beneficial for science engagement institutions. Collaboration can bring profitable opportunities occurring from networking and bonding between professionals. Besides that, sharing difficulties and thoughts on important issues, as well as information on state-of-the-art themes allows professionals that work within a smaller national scene to expand their reach. Ecsite effectively promotes that exchange of experiences, permeates collaboration on European projects and EU calls to action, and helps each member attend high profile events and keep up with of the latest news.

In my almost four months at the Ecsite office I can say I surpassed my purpose of learning from a well organised office environment working towards the goals I also believe in. Ecsite attracts people from different backgrounds and with diverse work methods, and the office adapts very well to that. Within a fixed number of working hours anyone can manage their time according to their most productive

schedule. I was put at ease and welcomed from the first day and it was eye opening to see so many different ways of working, not only within the office, but also when contacting, even if sometimes indirectly, with professionals from so many different nationalities. I mostly appreciated the openness for collaboration within the whole office but I noticed that also in the professionals at the Ecsite conference. Professionals from field seemed to share an open vibe of genuinely wanting to improve, supporting creativity and working unselfishly towards the upmost goals. I hope to always carry that lesson with me in the future.

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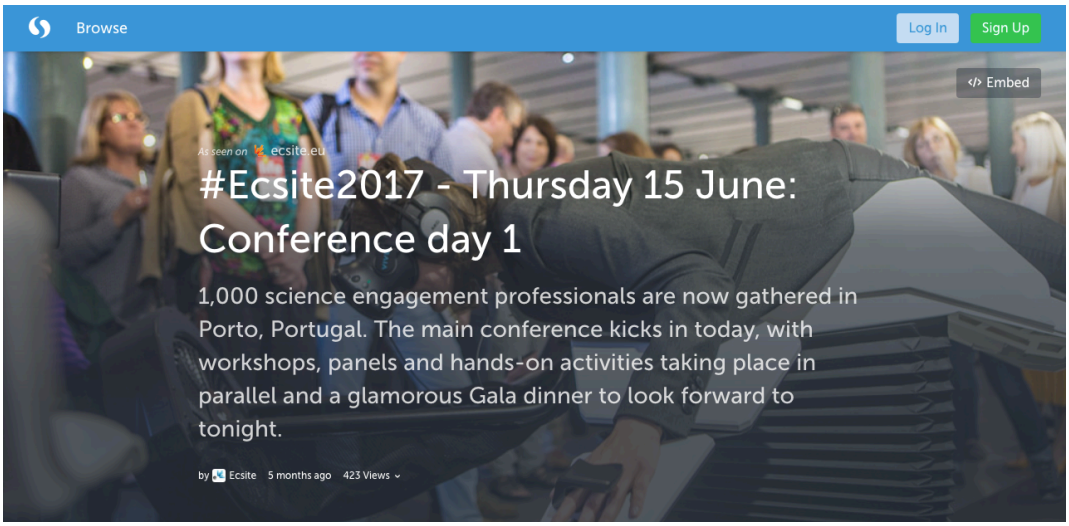
*APPENDIX*

This section showcases a bit more of the work I did during the internship at Ecsite related with social media content in general, content for the conference and the *Let it Grow* campaign.

### 6.1 Another example of photos taken at the Ecsite space in the Business Bistro

## 6.2 Storifys done (daily) for the Ecsite Conference




The 2017 Ecsite Annual Conference is taking place in Porto, Portugal, and is hosted by the Natural History and Science Museum of the University of Porto (MHNC-UP) and Ciência Viva

### Newcomers breakfast

First-time delegates get a few conference old-timers to share tips and tricks on how to make the most of the Ecsite conference.

## 6.3 Videos made for the Ecsite 2017 conference


**6.4 Social media engagement on the Twitter, Facebook and LinkedIn accounts**


**Ecsite** @Ecsite · Jun 20

#EcsiteAwards 2017 proudly mentioned NOESIS in #Thessaloniki, a great #scicomm programme 4 refugee kids #WorldRefugeeDay #RefugeesWelcome

4 11

You Retweeted

**Spokes Ecsite** @SpokesEcsite · 3m

#STEM or #STEAM?
@XXanthoudaki talks #science #arts & #education on Spokes:
bit.ly/2nEqVS2

Exploratorium, Teaching STEM, STEM Teaching Tools and 2 others

1

You Retweeted

**Spokes Ecsite** @SpokesEcsite · Mar 17

#museums & #sciencecentres that run activities/spaces for #babies & #toddlers. Their thoughts, on Spokes: bit.ly/2ms3ydH #scicomm

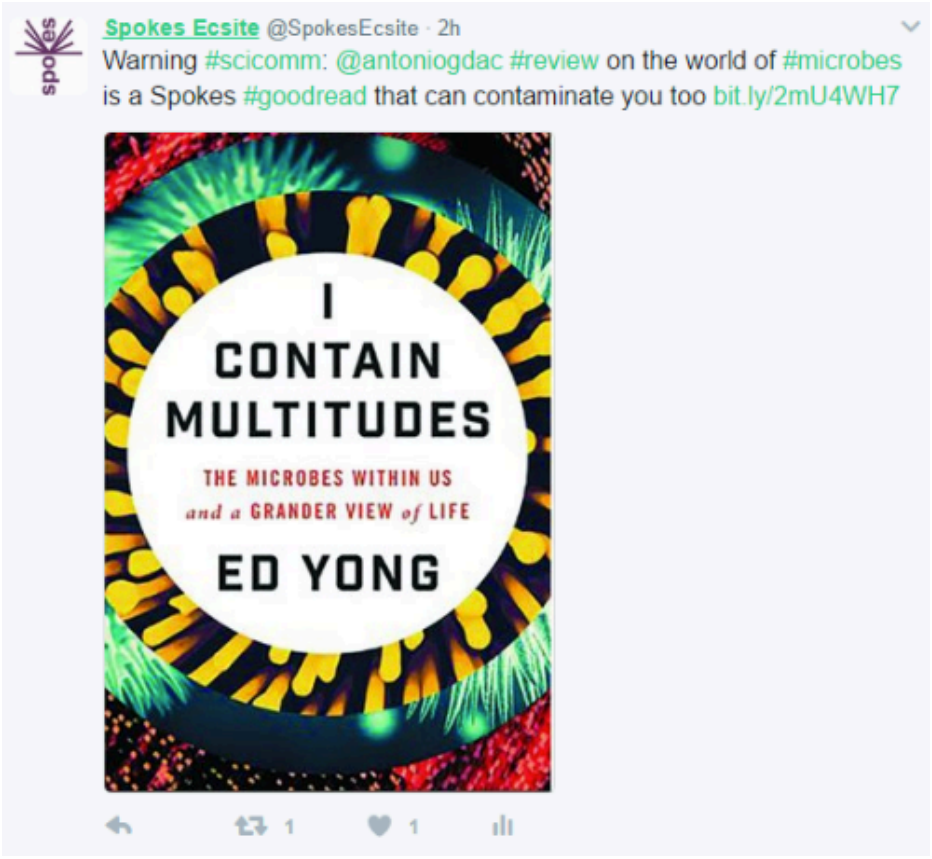
Museum of Science

3 5

**Spokes Ecsite** @SpokesEcsite · Apr 7

On #WorldHealthDay get inspired by #researchers & citizens getting together for + ethical #healthcare bit.ly/2e3pHi5 #RRI #scicomm


Andrea Troncoso, KEA European Affairs, Lux Science Center and 3 others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**Ecsite, European network science centres & museums** está com Parco Natura Viva e MUSE - Museo delle Scienze.
14/4 ·

Ecsite members we need you!

Ecsite has recently started conversations with DG Environment at the European Commission and we would like to get a clearer picture of member organisations engaging audiences with environmental topics.

Let us know by 14 May what you're doing on these topics. It will take you 5-20 minutes and will be helpful to our entire network.

Together our stories will have more impact!
http://bit.ly/2ouFESS

**Ecsite, European network science centres & museums**
16/4 ·

Spokes magazine is out!
Wicked problems and the need for civic science by Justin Dillon | Interviews to 6 digital storytellers | A column by Catherine Franche on how you can help Ecsite engage audiences with environmental topics | And of course news from Ecsite members, good reads, jobs, project updates...
Read it here: http://bit.ly/2oGxtn2

**Ecsite, European network science centres & museums**
16/5 ·

The International Day for Biological Diversity is almost here!
From 20 to 22 May 180+ organisations will come together for the common goal of helping protect Europe's species from biodiversity loss.

Only 6 days left until we get to enjoy all the compelling #letitgrowcampaign initiatives put together by Ecsite, BGCI and EAZA's members.

Learn more about the Let It Grow campaign or what Ecsite's members are planning for #IDB2017 here: http://www.letitgrow.eu/

**Ecsite, European network science centres & museums**
25/5 ·

"Disability, accessibility or inclusion – what could be the most useful angle for the science engagement community? [...] an exploration of what accessibility can mean in a museum or science centre context, beyond door width, text contrast or subtitles;"

Don't miss this comprehensive review, featured in the latest Spokes issue, shining light to several cases from science centres and museums that are (re)framing the way they deal with diversity: http://bit.ly/2pVfZ3x


**Ecsite, European network science centres & museums**
27/4 ·

Less than a month before the International Day for Biological diversity on 22 May! It's still time to get involved and take part in the Let It Grow campaign. Register on the website (http://bit.ly/1RcJ5Wz) and get people involved with their local biodiversity!

You can also let us know what you're doing to engage your audiences with environmental topics by taking our online survey until 14 May --> http://bit.ly/2ouFESS

**Ecsite, European network science centres & museums**
24/5 ·

Thank you for taking part in the #letitgrowcampaign!

Ecsite, EAZA and BGCI members took a stance for biodiversity this weekend. From BioBlitzs to gardening workshops there was something for everybody during International Day for Biological Diversity (22 May) & the first ever European Natura 2000 Day (21 May).
Read more: http://bit.ly/2rOYlAq

Keep sharing your pictures and videos by using the #letitgrowcampaign hashtag or by tagging us on Facebook and Instagram Let It Grow

Thank you for helping Europe's biodiversity flourish. It's an ongoing task, so continue to Let It Grow! 🌱

Photo by Green Teen Team

Museu Agbar de les Aigües AmbienteParco Mina de Ciência - Centro de Ciência Viva do Lousal Exploratório - Centro Ciência Viva de Coimbra Centro Ciência Viva do Algarve Centro Ciência Viva da Floresta Museu de Ciències Naturals de Barcelona Città della Scienza

**Ecsite, European network science centres & museums**
17/5 ·

Spokes magazine is out!

Access: beyond ramps and large print by Julie Becker | Interviews on how science centres can respond to audience disagreement | A column by Universcience CEO Bruno Maquart on science engagement and digital media | And many opportunities, project updates, news from Ecsite members and more...

Read it here: http://bit.ly/2qoelL9

**Ecsite, European network science centres & museums**
5/6 ·

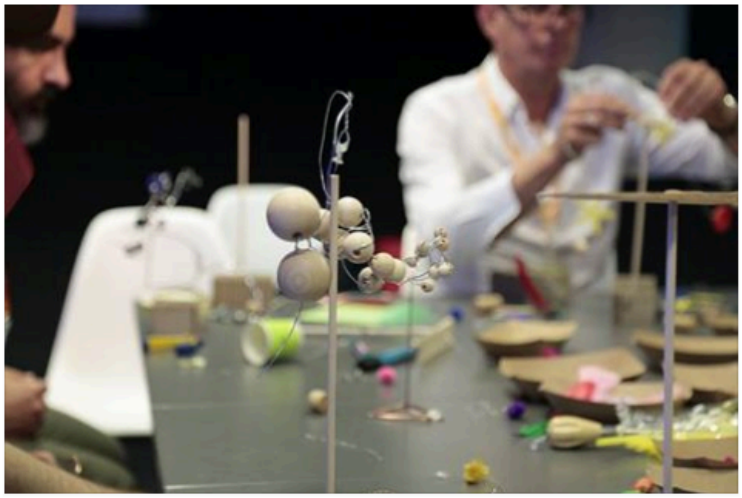
Curious to know what Ecsite accomplished in 2016?

Then read Ecsites' vibrant Annual Report, right here: bit.ly/2rY3yJh

You'll find a glimpse of what happened during events, like the Annual Conference, but you'll also discover all the projects, collaborations and other highlights that made Ecsite history during the past year.

**Ecsite, European network science centres & museums**
15/3 ·

Spokes magazine is out!
#STEM to #STEAM: necessary change or 'the theory of whatever'? by Maria Xanthoudaki | Four interviews with museums and science centres that run activities and spaces for under 3s | A column by Sharon Ament calling for applications to the 2017 Mariano Gago Ecsite Awards | and of course news from Ecsite members, good reads, jobs, project updates... Read it here: http://bit.ly/2mWl6me



**Ecsite, European network science centres & museums**
23/3 ·

Some people may know about #STEM but how about #STEAM? What does the 'A' actually stand for? And what does it mean for #education and the #arts?

Maria Xanthoudaki shares her thoughts on the issue of this new emerging term and the precarious nature of acronyms: http://bit.ly/2nEqVS2

**Ecsite, European network science centres & museums**
19/5 ·

It's almost here! One day left before the big momentum for the Let It Grow campaign. This week-end more than 180 organisations from Ecsite, EAZA and BGCI will run activities to get people involved with their local biodiversity!
Learn more about the Let It Grow campaign or what Ecsite members are planning for #IDB2017 and #NATURA2000DAY here:
http://www.letitgrow.eu/
Share your pictures and videos by using the #letitgrowcampaign hashtag or by tagging us on Facebook and Instagram Let It Grow

Città della Scienza, Museu Agbar de les Aigües, AmbienteParco, Mina de Ciência - Centro de Ciência Viva do Lousal, Centro Ciência Viva Tavira, Expolab - Centro Ciência Viva, Centro Ciência Viva do Algarve, Centro Ciência Viva de Bragança, Centro Ciência Viva de Sintra, Museu de Ciències Naturals de Barcelona

**Ecsite, European network science centres & museums**
23/3 ·

Spring is here ! It's time to Let It Grow!
Join the 180+ organisations already involved and get ready for a collective momentum with International Day for Biological diversity on 22 May.
Get people involved with their local biodiversity and join the Let It Grow campaign! http://bit.ly/2nV1aOB

## 6.5 News and Calls published on the Ecsite website

International School of Science Journalism providing fellowships | Ecsite

# fellowships

**Featured in Spokes**

This year at the Ettore Majorana Foundation and Centre for Scientific Culture in Italy the theme will be *'Unveiling the Universe: when Science hits the News'*. The aim of the School is to discuss how current advances have contributed to our knowledge of the Universe, while addressing the challenges of how to communicate complex but exceptional discoveries to the public.

There are **30 fellowships** available for participants from an European country that offer to cover any school fees, meals, accommodation and even travel expenses to and from Erice (only for the arrival on 1 July and the departure on 6 July 2017) and **5 other fellowships** accessible to participants applying from a non-European country, which cover the same expenses excluding travel.

The fellowships are aimed at young science journalists with at least three years of professional experience, working science communicators and students in a master program in science journalism/science communication.

Apply **here** for the 2017 edition until 3 April!


Calls for different key actions of the Erasmus+ programme of the European Commission are launched at different times (see **overall calendar**). Three have just been launched with a deadline on 4 October: Mobility of individuals in the field of youth; Strategic partnerships in the field of youth; Meeting between young people and decision-makers in the field of youth.

They are meant for a wide range of organisations including universities, education and training providers, think thanks, research groups, and private businesses. These prospects can be achieved through numerous initiatives:

- By coordinating a **youth mobility project**. This aims to help support the professional development of youth workers, by providing activities such as seminars, training courses or observation periods abroad;
- **Endorsing activities** that aim to bring young people and decision makers into discussion to help develop policies in the sector is also encouraged. This should be endorsed by national or transnational events and consultations between young people and decisions-makers, promoting participation in democratic life;
- Or by starting **Strategic Partnerships**, for a wide variety of public, to strengthen cooperation and networking between establishments and promote diversity, innovative practices and active citizenship among young people. Strategic Partnerships can be of different sizes depending on the objective of the project and elements, like the organisations involved or the expected impact.

Find more information on the opportunities available on the Erasmus+ **Programme Guide**.

## 6.5.2. News for biodiversity activities (Let it Grow)



Now in its second year, "**Let It Grow**" is a public engagement campaign organised by Ecsite together with **EAZA** (European Association of Zoos and Aquaria) and **BGCI** (Botanical Gardens Conservation International). The aim of the campaign is to **raise awareness of local biodiversity** and to involve local residents in its protection.

The three associations and their members are joining forces to really propel the way citizens think about native species and help ecosystems grow into their healthiest 'self'. Get on board and **join the 180+ organisations** already involved!

### WHAT'S IN IT FOR ECSITE MEMBERS?

**Social responsibility: do your bit for local biodiversity.** Whether you're a science centre, a university or a natural history museum, you can do your bit to tackle one the 21st century's' biggest challenges: biodiversity preservation. Get your staff and audiences on board and help secure the future of Europe's native species

**Advocacy: help Ecsite demonstrate impact.** Ecsite has recently started conversations with DG Environment at the European Commission. We don't know if and how this will result in opportunities for members, but one thing is sure: wide participation in this biodiversity campaign and inspiring case studies will help us position the network as a strong partner for policymakers.

**Partnerships: start or strengthen local alliances.** Getting involved in the Let It Grow campaign can be a way to connect with conservation and environment stakeholders in your area. Use this opportunity to meet local EAZA and BGCI members, but also to build links with your local authority, NGOs, citizen science groups...

### WHAT?

Participation can be as simple as setting aside a space to let life thrive "spontaneously" and letting passers-by know why.
**A whole spectrum of activities is possible**: take audiences on a tour of your backyard, build insect homes with them, or run your own biodiversity measurement event.
It's also absolutely fine to give the "Let It Grow" label to a local biodiversity event, programme or workshop you were already planning to run.
In any case, don't re-invent the wheel! **Start by opening the campain handbook** that will give you an excellent overview of opportunities and available resources. **Sign up** on the campaign website and you'll have access to shared resources (workshop plans, designs, graphic elements etc).

### WHEN?

Let It Grow actions will be running throughout the year, with **a peak around 22 May**, which is **International Day for Biological Diversity**. We strongly encourage all Ecsite members to run activities around that date.

Some big days for biodiversity are coming up very soon!
From 20 to 22 May Let It Grow campaign members will be busy showing their appreciation for Europe's native species by promoting a whole range of activities. You still have time to be a part of this joint campaign by Ecsite, BGCI and EAZA, making it a particularly impactful initiative and one open to a big range of institutions.

## OUR MEMBERS ALREADY HAVE PLENTY OF ACTIONS PREPARED

One example is the Natural History Museum of Toulouse (France) who will lead several inspiring activities ranging from exhibits to nature workshops:

The Museum will invite visitors to have a close look at all the animal and plant species hidden in their garden through an exhibition focused on discovering nature in the city;

Since they also want visitors to learn while having fun, nature and biodiversity themed games will be organized by the Museum, as well as a gardening workshop;

Moreover, for the past ten years the Natural History Museum of Toulouse has organized guided tours in "Le Sentier oublié" a left space where nature is growing freely on an abandoned industrial site. A great opportunity to delve into local biodiversity!

## TAKING PART IS EASY AND REWARDING

We would like to thank everyone who has organized or is planning to have Let It Grow events in their institutions.The impact of 180+ organisations working towards the same goals has been exceedingly positive.

And thank you to all the Ecsite members who took the time to complete our survey. It's been a great opportunity for Ecsite to get a clearer picture of member organisations engaging audiences with environmental topics.

# Time to Let It Grow!

Now in its second year, "**Let It Grow**" is a public engagement campaign organised by Ecsite together with **EAZA** (European Association of Zoos and Aquaria) and **BGCI** (Botanical Gardens Conservation International). The aim of the campaign is to **raise awareness of local biodiversity** and to involve local residents in its protection.

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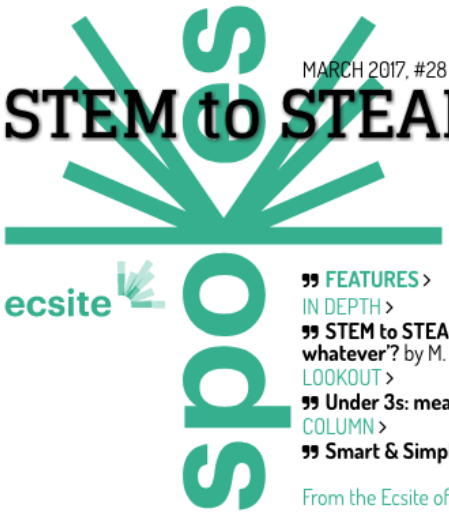
## 6.6 Spokes issues and newsletters I worked on







Ecsite thanks the writers who have generously contributed to this issue of Spokes. Have an idea for Spokes? Check out the contributors' guide and get in touch.

Spokes is the monthly digital magazine of Ecsite, the European network of science centres and museums. It is put together by the Spokes Editorial Committee:

**Maarten Okkersen**, Head of Communication and Marketing, Museon, The Hague, Netherlands – Chairperson
**Julie Becker**, Communications and Events Manager, Ecsite, Brussels, Belgium – Editor
**Andrea Bandelli** , Executive Director, Science Gallery International, Dublin, Ireland
**Raphaël Chanay**, Exhibitions and Interpretation Manager, Natural History Museum, London, UK
**Marie Couëdic**, Communications and Events Intern, Ecsite, Brussels, Belgium
**Raquel da Cunha**, Events and Communications Officer, Ecsite, Brussels, Belgium
**Bárbara Dias Teixeira**, Communications and Events Intern, Ecsite, Brussels, Belgium
**Wiktor Gajewski**, Science and Art Events Director, Copernicus Science Centre, Warsaw, Poland
**Aliki Giannakopoulou**, Project Manager, Ellinogermaniki Agogi, Pallini, Greece
**Antonio Gomes da Costa**, Independent Consultant - Science Communication and Education, Lisbon, Portugal
**Gema Revuelta**, Associate Professor, Universitat Pompeu Fabra, Barcelona, Spain
**Maria Xanthoudaki**, Head of Education and International Relations, Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci, Milan, Italy

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Responsible editor: Catherine Franche, Executive Director for Association européenne des expositions scientifiques, techniques et industrielles, aisbl

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Frequency: monthly since April 2015 - issue 28, March 2017


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IN DEPTH

## STEM to STEAM: necessary change or 'the theory of whatever'?

What does the 'A' in STEAM actually stand for?
Read the piece by Maria Xanthoudaki

LOOKOUT

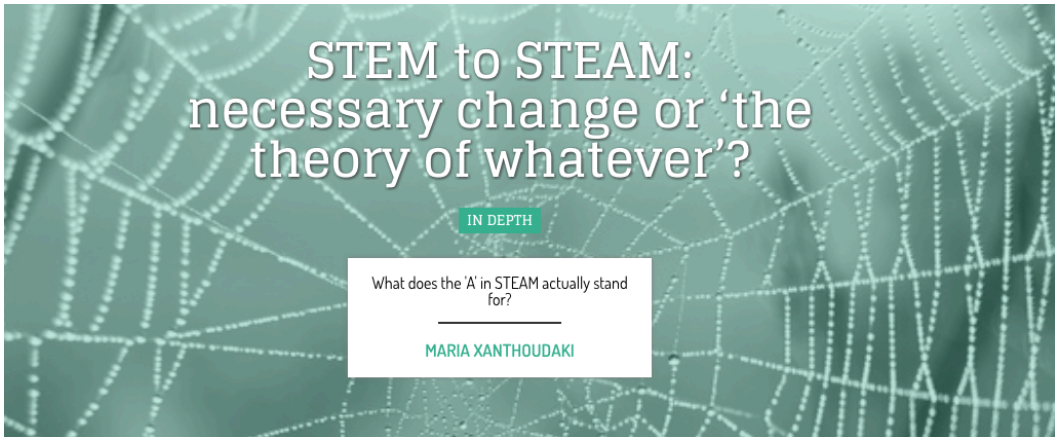
## Under 3s: meaningful offers for 'natural' scientists

Debunk your misconceptions about babies and toddlers in museums and science centres.
Read the interviews

COLUMN

## Smart & Simple? Sustainable Success?

Jury Chair Sharon Amend: we need ***you*** for the 2017 Mariano Gago Ecsite Awards. Read the column






IN DEPTH

## Access: beyond ramps and large print

Inspiring case studies of science centres and museums re-framing what accessibility means. Read the piece

LOOKOUT

## In total disagreement

How to respond to audiences who disagree with our offer? Read the interviews

COLUMN

## Science engagement and digital media: meant to be?

Universcience CEO on the theme of the upcoming Ecsite Directors Forum. Read the column

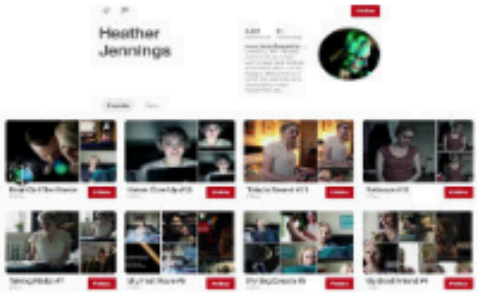
IN DEPTH

## Wicked Problems

Challenges such as climate change and biodiversity loss call for civic science and a convergence of science education and environmental education, argues Justin Dillon. Read the piece

LOOKOUT

## Digital Storytellers




Six professionals share their insights on what it means to tell stories using digital media. Read the interviews

COLUMN

## The power of the collective

Ecsite Executive Director Catherine Franche calls members for mobilisation on environmental topics. Read the column